

AD-A215 089

FILE 002

REPORT DOCUMENTATION PAGE

Form Approved
OMB No. 0704-0188

Public reporting burden for the collection of information is estimated to average 1 hour per response, including the time for reviewing instructions, searching existing data sources, gathering and maintaining the data needed, and completing and reviewing the collection of information. Send comments regarding the burden estimates or any other aspect of this collection of information, including suggestions for reducing the burden, to Washington Headquarters Services, Directorate for Information Operations and Reports, 1215 Jefferson Davis Highway, Suite 1200, Arlington, VA 22202-4302, and to the Office of Management and Budget, Paperwork Reduction Project (0704-0188), Washington, DC 20503.

1. AGENCY USE ONLY (Leave blank)	2. REPORT DATE	3. REPORT TYPE AND DATES COVERED	
	8 May 84	Interim (1/11/83-1/5/84)	
4. TITLE AND SUBTITLE "ROBUST CONTROL OF MULTIVARIABLE AND LARGE SCALE SYSTEM,"		5. FUNDING NUMBERS	
6. AUTHOR(S) J.E. Wall			
7. PERFORMING ORGANIZATION NAME(S) AND ADDRESS(ES) Honeywell, Inc Systems & Research Center, 2600 Ridgway Parkway, P.O. Box 312, Minneapolis MN 55440		8. PERFORMING ORGANIZATION REPORT NUMBER AFOSR - R- 89-1477	
9. SPONSORING/MONITORING AGENCY NAME(S) AND ADDRESS(ES) AFOSR BLDG 410 BAFB DC 20332-6448		10. SPONSORING/MONITORING AGENCY REPORT NUMBER F49620-82-C-0090	
11. SUPPLEMENTARY NOTES			
12a. DISTRIBUTION/AVAILABILITY STATEMENT		12b. DISTRIBUTION CODE	
13. ABSTRACT (Maximum 200 words) This document is the fifth and sixth quarterly progress reports for the period indicated. The research focus during this time has been on computational issues associated with the new L/H control synthesis theory and on examples illustrating application of the theory.			
			
14. SUBJECT TERMS		15. NUMBER OF PAGES 2	
		16. PRICE CODE	
17. SECURITY CLASSIFICATION OF REPORT unclassified	18. SECURITY CLASSIFICATION OF THIS PAGE unclassified	19. SECURITY CLASSIFICATION OF ABSTRACT unclassified	20. LIMITATION OF ABSTRACT

NSN 7540-01-280-5500

Standard Form 298 (890104 Draft)
Prescribed by ANSI Std. Z39-18
2000

89 11 25 037

8 May 1984

ROBUST CONTROL OF MULTIVARIABLE

AND

LARGE SCALE SYSTEMS

for

AIR FORCE OFFICE OF SCIENTIFIC RESEARCH
Bldg. 410
Bolling Air Force Base, DC 20221

Contract No. F49620-82-C-0090

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JEW0138AJ

ROBUST CONTROL OF MULTIVARIABLE
AND
LARGE SCALE SYSTEMS

This document is the fifth and sixth quarterly progress reports for Contract No. F49620-82-C-0090. It covers the period from 1 November 1983 to 1 February 1984 and the period 1 February 1984 to 1 May 1984.

SUMMARY OF ACCOMPLISHMENTS

The research focus during this time has been on computational issues associated with the new L_{∞}/H_{∞} control synthesis theory and on examples illustrating application of the theory. A new scheme for parameterization of optimal controllers has eliminated the numerical problems which had plagued our first attempts to implement the theory.

Preliminary application of the new L_{∞}/H_{∞} synthesis theory to sample control design problems has been very encouraging. The most useful feature is the handling of both performance and robustness in a natural way. The most critical practical issue to be faced is the translation of various design requirements into a single robust performance specification. This translation must be understood better before the L_{∞}/H_{∞} methods can be made widely accessible.

PLANS FOR NEXT QUARTER

The main effort for the next quarter will be devoted to working examples to illustrate the theory and writing up results.

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NTIS Classification	
EFTC T-43	
Unclassified	
Justification	
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